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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,951

08/10/2006

Masato Saito

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BACON & THOMAS, PLLC

625 SLATERS LANE

FOURTH FLOOR

ALEXANDRIA, VA 22314-1176

EXAMINER

AHMED, SHEEBA

ART UNIT

PAPER NUMBER

1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,951	Applicant(s) SAITO ET AL.	
	Examiner SHEEBA AHMED	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-11,15 and 17-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-11,15 and 17-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Amendments to claims 1, 6, and 7 have been entered in the above-identified application. Claims 3, 4, 12-14, and 16 are cancelled. New claims 21-29 are added. **Claims 1, 2, 5-11, 15, and 17-29 are pending.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 6, 8-11, 15, and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Saitou et al. (US 2003/0180520 A1).

Saitou et al. disclose a transparent hard coat film, in which a transparent hard coat layer is formed on at least one surface of a transparent polymer film, the transparent hard coat layer is composed of at least ionizing radiation curable organic-inorganic hybrid hard-coat agent and inorganic particles having a mean particle diameter of 1-10 microns. The organic-inorganic hybrid hard-coat agent preferably contains reactive silica (see Abstract). The transparent hard coat film is suitable for a surface member of various kinds of display devices such as liquid crystal display devices, CRT displays, plasma displays, and EL displays (paragraph 0001).

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The organic-inorganic hybrid hard-coat agent used is a material in which inorganic microparticles are highly uniformly dispersed in an organic binder when it is made into a film, and which exhibits properties that cannot be obtained by films consisting of only organic binder (paragraph 0008). The ionizing radiation curable organic-inorganic hybrid hard-coat agent includes reactive silica particles to which photosensitive groups having a photopolymerizable property are introduced at least on the surface and the reactive silica particles has a mean particle diameter of 0.001-0.1 microns (paragraph 0009). The transparent hard coat film has a thickness of 2-10 microns and the inorganic particles as a matting agent is contained in an amount of not less than 2 parts by weight and not more than 20 parts by weight based on 100 parts by weight of the hard-coat agent (paragraph 0011). As the transparent polymer film, any material can be used so far as it does not impair transparency, and there can be mentioned polyethylene terephthalate, polybutylene terephthalate, polyethylene naphthalate, polycarbonates, polyethylenes, polypropylenes, polystyrenes, triacetyl cellulose, acrylic, and polyvinyl chloride. Among them, a polyethylene terephthalate film subjected to orienting, in particular, biaxial orienting is preferred in view of superiority in mechanical strength and dimensional stability. It is also preferred to use the film having a surface subjected to corona discharge treatment or provided with an easy adhesion layer to improve adhesion to the transparent hard coat layer (paragraph 0015). The transparent hard coat layer consists of at least an ionizing radiation curable organic-inorganic hybrid hard-coat agent (referred as "HbHC agent" hereinafter) and inorganic particles as a matting agent. The HbHC agent is a material that is cured by

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irradiation of ionizing radiation and when it is made into a film, inorganic microparticles are uniformly dispersed in an organic binder. In a state that the material is not cured, the organic binder may be chemically bonded with the inorganic microparticles or inorganic microparticles may be uniformly dispersed in an ionizing radiation curable organic binder. As the inorganic microparticles, silica, particularly reactive silica particles to which photosensitive groups having a photopolymerizable property are introduced at least on the surface (sometimes referred as "reactive silica particles") is preferred. Here, as the photopolymerizable photosensitive groups, polymerizable unsaturated groups such as (meth) acryloyl oxy groups can be mentioned. When such an HbHC agent containing reactive silica particles is used, the HbHC agent may further include compounds that can be photopolymerized with the photopolymerizable photosensitive groups introduced into the surface of the reactive silica particles such as unsaturated organic compounds having polymerizable unsaturated groups. The reactive silica particles have powder-like silica or colloidal silica as a body, which is chemically bonded through silyl oxy group with a compound having a hydrolyzable silyl group (A), a polymerizable unsaturated group (B), a group (C) represented by the following formula (1) and a group (D) represented by the following formula (2) (referred as "polymerizable unsaturated group modified hydrolyzable silane" hereinafter). That is, the hydrolyzable silyl group of the polymerizable unsaturated group modified hydrolyzable silane is hydrolyzed to form a silyl oxy group, which is chemically bonded between silica particles. Examples of the hydrolyzable silyl groups (A) include

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carboxylate silyl group such as alkoxy silyl group and acetoxysilyl group, halogenated silyl group such as chlorosilyl group, amino silyl group, oxime silyl group, hydride silyl group and the like (paragraphs 0017-0023). All limitations of claims 1, 2, 5, 6, 8-11, 15, and 27-29 are disclosed in the above reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7 and 17-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Nagami (US 2003/0180529) in view of Kimura et al. (US 2002/0001055).

Nagami discloses an anti-Newton ring sheet comprising an anti-Newton ring layer containing binder resin and particles, and formed on at least one surface of a transparent polymer film, wherein the particles are monodisperse spherical particles having a mean particle diameter of not less than 0.4 microns and not more than 2.0 microns and are contained in an amount of not less than 0.5 parts by weight and not more than 3 parts by weight based on 100 parts by weight of the binder resin. The anti-Newton ring sheet which can be used for optical sheets such as a light diffusing sheet suitable for a backlight unit of a liquid crystal display (See Abstract). Specifically, an anti-Newton ring sheet comprises an anti-Newton ring layer formed on at least one

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surface of a transparent polymer film. The thickness of such a transparent polymer film is suitably selected depending on the material, but is generally 25-500 microns (Paragraph 008). Suitable examples of such monodisperse spherical particles include inorganic particles such as spherical silica particles, synthetic resin particles such as spherical acrylic resin particles, spherical polystyrene resin particles, spherical polyurethane resin particles, spherical polyethylene resin particles, spherical benzoguanamine resin particles, and spherical epoxy resin particles. As the binder resin, ones having optical transparency such as thermoplastic resins, thermosetting resins, ionizing radiation curable resins can be used. Examples of such resins include polyester resins, acrylic resins, polyester acrylate resins, polyurethane acrylate resins, epoxy acrylate resins, cellulose resins, acetal resins, vinyl resins, polyethylene resins, polystyrene resins, polypropylene resins, polyamide resins, polyimide resins, melamine resins, phenol resins, silicone resins, fluorine resins. Among them, acrylic resins having good weathering resistance and high transparency, in particular two-part curable type acrylic polyurethanes, are preferable (Paragraph 21). The thickness of the anti-Newton ring layer is not particularly limited so far as it exhibits its function but is in the range of 1-20 microns (Paragraph 21). When the anti-Newton ring sheet is used as an optical sheet such as a light diffusing sheet, an optical function layer such as a light diffusing layer is formed on the surface opposite to the surface on which the anti-Newton ring layer is provided. As the optical function layer, there can be mentioned a light diffusing layer, prism layer, anti-reflection layer, polarizing layer, reflection layer and so forth (Paragraph 23). As shown in FIG. 3, an optical film having an anti-Newton ring property

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can be incorporated as a light diffusing sheet into a backlight unit 20 constructed by laminating a light diffusing sheet 23, a light guide plate 22 and a reflection sheet 21 as shown in FIG. 3, and is capable of preventing occurrence of Newton rings without scratching the contact surface even if it is brought into contact with a light guide plate made of a relatively soft material.

Nigami does not teach that the of variation of the particle diameter distribution of the fine particles is not less than 30% 28% and not more than 80%.

However, Kimura et al. disclose a light diffusion sheet comprising a light diffusion layer formed on a transparent substrate and containing a binder resin and resin particles that impart an uneven surface, wherein the light diffusion sheet has a total light transmission of 70.0% or more, haze of 80.0% or more, and a distinctness of transmission image of 25.0% or more. This light diffusion sheet is high luminance in the front direction, is excellent in light-diffusing property, does not require use of an expensive prism sheet which is readily susceptible to surface damage, and does not require careful handling. The resin particles also have a coefficient of variation of particle diameter distribution of less than 50.0%, preferably 45.0% or less. If the coefficient of variation of particle diameter distribution is 50.0% or more, or 20.0% or less, it becomes difficult to balance the distinctness of transmission image and haze (see paragraph 0032).

Accordingly, it would have been obvious to one having ordinary skill in the art to optimize the variation of the particle diameter distribution of the fine particles given that

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Kimura et al. teach the transparency and haze can be adjusted by varying the variation of the particle diameter distribution of the fine particles.

Response to Arguments

4. Applicant's arguments with respect to claims **1, 2, 5-11, 15, and 17-29** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEEBA AHMED whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 8am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheeba Ahmed/
Primary Examiner, Art Unit 1794